REMARKS

Claims 1-18 are pending in the application. Upon entry of the present amendment, claims 1, 2, 8, 9, 15 and 16 will have been amended. Reconsideration of the rejection and allowance of the pending application in view of the following remarks are respectfully requested.

In the Office Action, the Examiner rejected claims 1, 6-8, 10, 11-14, 17 and 18 under 35 U.S.C. §103(a) as being unpatentable over Muramoto et al. (U.S. Patent No. 6,507,359) in view of Sensui (U.S. Patent No. 6,041,186). Applicants respectfully traverse the rejection for at least the following reasons.

The present invention is directed towards a stereo camera. The stereo camera of the present invention includes, inter alia, a pair of photographing optical systems that produces a corresponding pair of photographing areas. The stereo camera also includes a pair of variable angle prisms. One of the variable angle prisms is provided in a light path of each of the photographing optical systems. Each variable angle prism varies an angle of convergence, defined by optical axes of the pair of photographing optical systems, to adjust an amount of the common photographic coverage of the pair of photographing optical systems. The stereo camera also includes a convergence angle controller that varies the angle of convergence by driving the variable angle prisms to vary an apex angle of the variable prisms.

Muramoto relates to a multi-eye camera which includes image-taking systems 201 and 202. See col. 7, lines 62-67 and Figure 2. Muramoto does not disclose or suggest providing a variable angle prism in a light path of each of the photographing optical systems. The Examiner recognizes this in the Office Action, but asserts that

Sensui teaches using a variable apex angle prism to improve an object distance measuring device, and asserts that it would have been obvious to use a variable apex angle prism in Muramoto's device to improve its object distance measuring device.

Sensui relates to a finder system 1000 that includes a real image type first optical system 1001R and a real image type second optical system 1002R. See col. 5, lines 16-18 and Figure 1B. In one embodiment, the finder system 1000 includes a shiftable objective optical system 20RS. See col. 7, lines 8-14 and Figure 1B. Sensui discloses, in col. 7, lines 22-23, that a variable apex angle prism may be used as an alternative.

However, as shown in Figure 1B, Sensui's objective optical system 20RS is not provided in a light path of the real image type first optical system 1001R, that is, along optical axis Ax1. Thus, Sensui does not disclose or suggest providing a variable angle prism in a light path of each photographing optical system of a pair of photographing optical systems.

In paragraph 1 of the Office Action, the Examiner asserted that Sensui teaches an arrangement of optical elements together with a controlling system and use of a variable apex angle prism. However, the Examiner did not address the point that Sensui does not disclose or suggest providing a variable angle prism in a light path of each photographing optical system of a pair of photographing optical systems. Applicants respectfully request that the Examiner directly address this deficiency of Sensui in the next office communication.

Thus, Applicants respectfully submit that the combination of Muramoto and Sensui, as suggested by the Examiner, fails to disclose or suggest a stereo camera that includes a pair of photographing optical systems and a pair of variable angle prisms,

where a variable angle prism is provided in a light path of each of the photographing optical systems, as recited in claims 1 and 8. For at least these reasons, Applicants submit that the rejection of claims 1 and 8 is improper, and respectfully request withdrawal of the 35 U.S.C. § 103(a) rejection.

Dependent claims 6, 7, 10-14, 17 and 18 are also submitted to be in condition for allowance for at least the reasons set forth above with respect to claims 1 and 8.

In the Office Action, the Examiner also rejected claims 2, 9, 15 and 16 under 35 U.S.C. § 103(a) as being unpatentable over Muramoto in view of Saito (U.S. Patent No. 5,652,926). Applicants respectfully traverse the rejection for at least the following reasons.

The stereo camera of the present invention includes, inter alia, an object distance measuring device that performs an active distance measurement to measure a distance to an object, a convergence angle adjustment mechanism, and a controller that controls each of the pair of photographing optical systems to perform a passive distance measurement of an object distance until such time as a release button is depressed at least by a half step. The controller also controls the object distance measuring device to perform the active distance measurement after the release button is depressed at least by the half step, and controls the convergence angle adjustment mechanism in accordance with object distance data corresponding to the measured distance to the object obtained by the active measurement. Applicants respectfully submit that this combination of features is not disclosed or suggested by the prior art of record.

Muramoto discloses that his multi-eye camera includes a control portion 303 that rotates display units 339-342. See Figure 5 and col. 10, lines 17-21. In the Office

Action, the Examiner recognizes that Muramoto's control portion 303 does not control a pair of photographing optical systems to perform a passive distance measurement of an object distance until a release button is depressed by at least a half step, control an object distance measuring device to perform an active distance measurement after the release button is depressed by at least a half step, and control a convergence angle adjustment mechanism in accordance with object distance data corresponding to the measured distance to the object obtained by the active measurement. However, the Examiner asserts that these features are well known and used, as evidenced by Saito, and asserts that it would have been obvious to modify Muramoto's camera to include these features in order to perform distance measurement with a high accuracy. Applicants respectfully disagree with this assertion.

Saito is directed to a camera that includes a distance measuring apparatus, and a release switch 32. See Figure 2. Saito discloses that when the release switch 32 is half-depressed, power is supplied to active and passive distance measuring units A and P, and the distance is then measured by the active and passive distance measuring units A and P. See Figure 4 (steps S100, S120) and col. 8, lines 34-45. When the release switch 32 is depressed to a second step, a shutter is driven. See Figure 4 (steps S210, S220) and col. 11, lines 11-13.

Thus, Saito does not disclose performing a passive distance measurement of an object distance until such time as the release button is depressed by at least a half step, (e.g., a passive distance measurement is not performed when the release button is not depressed by at least a half step). Saito's camera waits until the release switch 32 is depressed before starting the passive distance measurement. Furthermore, contrary to

the Examiner's assertion, Saito does not even suggest that the particular interaction between his release switch and distance measuring operations improves the accuracy of distance measurement. Thus, the Examiner has not asserted adequate motivation to combine the references.

Therefore, Applicants respectfully submit that the combination of Muramoto and Saito, as suggested by the Examiner, fails to disclose or suggest a stereo camera that includes a pair of photographing optical systems, an object distance measuring device that performs an active distance measurement to measure a distance to an object, a convergence angle adjustment mechanism, and a controller that controls each of the pair of photographing optical systems to perform a passive distance measurement of an object distance until a release button is depressed at least by half step, controls the object distance measuring device to perform the active distance measurement after the release button is depressed at least by half step, and controls the convergence angle adjustment mechanism in accordance with object distance data corresponding to the measured distance to the object obtained by the active measurement, as recited in claim 9.

Dependent claims 2-5, 15 and 16 are also submitted to be in condition for allowance for at least the reasons set forth above with respect to claim 9.

The Examiner also rejected claims 3 and 5 under 35 U.S.C. § 103(a) as being unpatentable over Muramoto in view of Saito, and further in view of Sorimachi et al. (U.S. Patent No. 4,818,858). Applicants respectfully traverse the rejection for at least the following reasons.

As discussed above, the combination of Muramoto and Saito, as suggested by

the Examiner, fails to disclose or suggest a stereo camera that includes a pair of photographing optical systems, an object distance measuring device that performs an active distance measurement to measure a distance to an object, a convergence angle adjustment mechanism, and a controller that controls each of the pair of photographing optical systems to perform a passive distance measurement of an object distance until a release button is depressed at least by half step, controls the object distance measuring device to perform the active distance measurement after the release button is depressed at least by half step, and controls the convergence angle adjustment mechanism in accordance with object distance data corresponding to the measured distance to the object obtained by the active measurement, as recited in independent claim 9. Sorimachi also fails to disclose or suggest such a camera. For at least these reasons, Applicants respectfully submit that the rejection of dependent claims 3 and 5 is improper, and request withdrawal of the 35 U.S.C. § 103(a) rejection.

The Examiner also rejected claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Muramoto in view of Saito, and further in view of Sensui. Applicants respectfully traverse the rejection for at least the following reasons.

As discussed above, the combination of Muramoto and Saito, as suggested by the Examiner, fails to disclose or suggest a stereo camera that includes a pair of photographing optical systems, an object distance measuring device that performs an active distance measurement to measure a distance to an object, a convergence angle adjustment mechanism, and a controller that controls each of the pair of photographing optical systems to perform a passive distance measurement of an object distance until a release button is depressed at least by half step, controls the object distance measuring

device to perform the active distance measurement after the release button is depressed at least by half step, and controls the convergence angle adjustment mechanism in accordance with object distance data corresponding to the measured distance to the object obtained by the active measurement, as recited in independent claim 9. Sensui also fails to disclose or suggest such a camera. For at least these reasons, Applicants respectfully submit that the rejection of dependent claim 4 is improper, and request withdrawal of the 35 U.S.C. § 103(a) rejection.

Based on the above, it is respectfully submitted that upon entry of the present amendment, this application will be in condition for allowance.

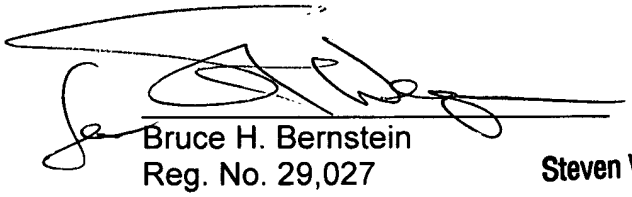
Applicants note that the present amendment is being submitted after the issuance of a final Office Action. Applicants submit that entry of the present amendment is proper in the present circumstances, as the present amendment places the application in condition for allowance. Furthermore, the present amendment merely clarifies Applicants' invention, and does not raise new issues requiring new consideration and/or search. Thus, entry of the present amendment and issuance of a Notice of Allowance is respectfully requested.

SUMMARY AND CONCLUSION

Entry and consideration of the present amendment, reconsideration of the outstanding Office Action, and allowance of the present application and all of the claims therein are respectfully requested and now believed to be appropriate. Applicants have made a sincere effort to place the present invention in condition for allowance and believe that they have now done so.

Should the Examiner have any questions or comments regarding this response, or the present application, the Examiner is invited to contact the undersigned at the below-listed telephone number.

Respectfully submitted,
Tetsuya ABE et al.



Bruce H. Bernstein
Reg. No. 29,027

Steven Wegman
Reg. No. 31,438

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GREENBLUM & BERNSTEIN, P.L.C.
1950 Roland Clarke Place
Reston, VA 20191
(703) 716-1191